

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: July 10, 2002, 08:23:43 ; Search time 14.81 Seconds
(without alignments)
103.810 Million cell updates/sec

Title: US-09-508-054-19

Perfect score: 87
Sequence: 1 YLRVQCRSVEGSCGF 16

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 150 summaries

Database : PIR_71.*

1: pir1.*
2: pir2.*
3: pir3.*
4: pir4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	83	95.4	217	1	STHUV
2	83	95.4	217	1	STHUV
3	83	95.4	217	2	I67410
4	80	92.0	199	2	B32435
5	80	92.0	215	2	A26449
6	80	92.0	217	1	LCHUC
7	80	92.0	217	2	E32435
8	77	88.5	212	2	I67408
9	77	88.5	217	2	I67409
10	77	88.5	217	2	I53267
11	71	81.6	217	2	I67411
12	51.5	59.2	163	2	JN0387
13	51.5	59.2	190	1	STHO
14	51.5	59.2	190	1	A61584
15	51.5	59.2	190	2	JK0219
16	51.5	59.2	190	2	JS0429
17	51.5	59.2	190	2	PN0140
18	51.5	59.2	216	1	STMS
19	51.5	59.2	216	1	STFG
20	51.5	59.2	216	2	I46145
21	51.5	59.2	216	2	A37782
22	51.5	59.2	216	2	B49159
23	51.5	59.2	216	2	JC4632
24	48.5	55.7	216	2	S49483
25	47.5	54.6	216	1	STRT
26	46.5	53.4	217	1	STBO
27	46.5	53.4	217	1	STSH
28	46.5	53.4	217	1	STGT
29	46.5	53.4	217	2	S32682

30	43.5	50.0	45	2	A60617	somatotropin - bul
31	43.5	50.0	190	2	A56816	somatotropin - bul
32	43.5	50.0	215	2	JS0037	somatotropin precu
33	43.5	50.0	215	2	I51188	somatotropin - bul
34	43	49.4	511	2	A69369	glutamate synthase
35	42.5	48.9	207	2	A60969	prolactin precursor
36	42	48.3	1683	2	T30885	complement compone
37	41.5	47.7	1036	2	E96682	hypothetical prote
38	41	47.1	128	2	S37763	hypothetical prote
39	41	47.1	227	2	A24911	prolactin-like pro
40	41	47.1	372	2	T47344	hypothetical prote
41	41	47.1	1964	2	T09059	notch4 - mouse
42	40	46.0	197	2	T36584	hypothetical prote
43	40	46.0	265	2	S77181	hypothetical prote
44	40	46.0	354	2	D71539	probable UDP gluc
45	40	46.0	360	2	F86528	UDP glucosamine N-
46	40	46.0	360	2	F72094	UDP-3-O-(R-3-hydr
47	40	46.0	384	2	D84509	hypothetical prote
48	40	46.0	715	2	AH0042	formate dehydrogen
49	40	46.0	951	2	T00017	gene ADAMTS-1 prot
50	40	46.0	1056	1	WMAD12	DNA-directed DNA p
51	40	46.0	1056	1	DJAD51	DNA-directed DNA p
52	39.5	45.4	112	2	AB2246	hypothetical prote
53	39.5	45.4	134	2	I51233	prolactin - Japane
54	39.5	45.4	139	2	S04353	somatotropin A - A
55	39.5	45.4	190	2	JE0144	growth hormone - c
56	39.5	45.4	190	2	S21750	somatotropin - Rus
57	39.5	45.4	190	2	JC5682	somatotropin - com
58	39.5	45.4	195	2	I51250	somatotropin - bow
59	39.5	45.4	210	2	S69263	growth hormone II
60	39.5	45.4	210	2	S69262	growth hormone I p
61	39.5	45.4	210	2	I50763	somatotropin - nob
62	39.5	45.4	210	2	S02764	somatotropin precu
63	39.5	45.4	210	2	A32424	somatotropin precu
64	39.5	45.4	210	2	S38351	somatotropin - sil
65	39.5	45.4	210	2	S21915	somatotropin - sil
66	39.5	45.4	210	2	JS0180	somatotropin precu
67	39.5	45.4	230	2	A37399	lactogen I precurs
68	39.5	45.4	527	2	A48076	glucose transporte
69	39.5	45.4	527	2	A45611	probable hexose tr
70	39	44.8	52	2	B30517	Ig heavy chain pre
71	39	44.8	72	2	C30517	Ig heavy chain pre
72	39	44.8	75	2	AH0392	probable exported
73	39	44.8	113	2	A34792	Ig heavy chain pre
74	39	44.8	115	2	D34792	Ig heavy chain pre
75	39	44.8	333	2	H98282	hypothetical prote
76	39	44.8	349	2	I39509	recombination prot
77	39	44.8	354	2	B81694	UDP-3-O-(R-3-hydr
78	39	44.8	365	2	S62542	hypothetical colle
79	39	44.8	365	2	C69538	hypothetical prote
80	39	44.8	426	2	F83420	ATP-dependent Clp
81	39	44.8	540	2	AC0063	hypothetical prote
82	39	44.8	554	2	B85072	hypothetical prote
83	39	44.8	586	2	A41125	gamma-glutamyltran
84	39	44.8	645	2	T29818	hypothetical prote
85	39	44.8	666	2	T24170	hypothetical prote
86	39	44.8	855	2	JH0287	immune regulatory
87	39	44.8	879	1	QRRTLD	LDL receptor precu
88	39	44.8	1360	2	T33922	hypothetical prote
89	38.5	44.3	209	2	JT0483	somatotropin I pre
90	38.5	44.3	332	2	C96693	hypothetical prote
91	38	43.7	28	2	EX0059	serine proteinase
92	38	43.7	71	2	E81184	probable periplasm
93	38	43.7	75	2	JC6048	regC protein - Ser
94	38	43.7	75	2	S63611	transcription acti
95	38	43.7	81	2	AD0490	probable regulator
96	38	43.7	394	2	D82556	hypothetical prote
97	38	43.7	398	2	T26284	hypothetical prote
98	37.5	43.1	199	2	A25791	somatotropin precu
99	37.5	43.1	200	2	S34604	prolactin - marble
100	37.5	43.1	210	1	STONC	somatotropin precu
101	37.5	43.1	210	1	I51186	somatotropin - chl
102	37.5	43.1	210	2	I50118	somatotropin precu

103 somatotropin precu 210 2 JS0179
104 somatotropin precu 210 2 S03709
105 somatotropin II pr 210 2 S06489
106 somatotropin precu 210 2 A31363
107 somatotropin I pre 210 2 A23154
108 trypsin inhibitor 27 2 JC2507
109 trypsin inhibitor 37 2 JX0058
110 trypsin - Mediter 37 2 S74088
111 defensin - Mediter 37 2 E64003
112 epigenetic prote 37 2 T13934
113 epigene protein - 37 2 S53802
114 chitin synthase [E 37 2 AG0369
115 ferredoxin-type pr 37 2 A26489
116 placental lactogen 37 2 JC2451
117 Cwnt-4 protein pre 37 2 S388
118 conserved hypothet 37 2 A83120
119 biphenyl dioxygena 37 2 JC4993
120 biphenyl dioxygena 37 2 A2409
121 biphenyl dioxygena 37 2 JC2467
122 biphenyl dioxygena 37 2 B41858
123 hypothetical prote 37 2 E69294
124 probable purine nu 37 2 S48907
125 flagella-related p 37 2 T44954
126 hypothetical prote 37 2 T47440
127 Li-cadherin precu 37 2 S53954
128 Li-cadherin - huma 37 2 S5396
129 VLDL receptor prec 37 2 JC4858
130 probable receptor 37 2 B96693
131 probable wall-asso 37 2 E86308
132 F20D23.9 protein - 37 2 T13177
133 sog protein - frul 37 2 T21133
134 hypothetical prote 37 2 T04464
135 complement C4 prec 37 2 A24558
136 thyroglobulin prec 37 2 UIHU
137 epidermal growth f 36.5 2 S13161
138 IE-0 orf141 - Bomb 36.5 2 T41878
139 conserved hypothet 36.5 2 A81703
140 probable periplasm 36 41.4 102 2 C81002
141 Ig heavy chain pre 36 41.4 114 2 B34792
142 Ig heavy chain pre 36 41.4 117 2 A34792
143 phospholipase A2 (36 41.4 118 1 PSKFT2
144 phospholipase A2 (36 41.4 118 1 PSKFT2
145 conserved hypothet 36 41.4 127 1 PSKFT1
146 conserved hypothet 36 41.4 127 2 E69429
147 Rab11 protein homo 36 41.4 127 2 T10546
148 rubredoxin [Imprt 36 41.4 159 2 G90103
149 hypothetical prote 36 41.4 166 2 F97425
150 flagellar protein 36 41.4 166 2 AF2643

ALIGNMENTS

RESULT 1

STHU

N: somatotropin 1 precursor [validated] - human
N: Alternate names: growth hormone 1; hGH-N; pituitary somatotropin
N: Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, short
C: Species: Homo sapiens (man)
C: Date: 24-Apr-1984 #sequence_revision 10-Feb-1995 #text_change 08-Dec-2000
C: Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217; A92
R: DeNoto, F.M.; Moore, D.D.; Goodman, H.M.
Nucleic Acids Res. 9, 3715-3730, 1981
A: Title: Human growth hormone DNA sequence and mRNA structure: possible alternative spli
A: Reference number: A93731; MUID: 82014939
A: Accession: A93731
A: Molecule type: DNA
A: Residues: 1-217 <DEN>
A: Cross-references: GB:V00520
A: Note: the 20K short form somatotropin lacks residues 58-72 (32-46 in the active hormo
R: Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg, P.
Genomics 4, 479-497, 1989
A: Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A: Reference number: A32435; MUID: 89307277
A: Accession: A32435
A: Molecule type: DNA
A: Residues: 1-217 <CHE>
A: Cross-references: GB:J03071; NID: g183148; PIDN: AAA52549.1; PID: g183149
R: Roskam, W.; Rougeon, F.
Nucleic Acids Res. 7, 305-320, 1979
A: Title: Molecular cloning and nucleotide sequence of the human growth hormone struct
A: Reference number: A93694; MUID: 80034477
A: Accession: A93694
A: Molecule type: mRNA
A: Residues: 1-217 <ROS>
A: Cross-references: GB:V00519
A: Note: 35-Pro was also found
R: Martial, J.A.; Hallowell, R.A.; Baxter, J.D.; Goodman, H.M.
Science 205, 602-607, 1979
A: Title: Human growth hormone: complementary DNA cloning and expression in bacteria.
A: Reference number: A94247; MUID: 79203293
A: Accession: A94247
A: Molecule type: mRNA
A: Residues: 1-217 <MAR>
R: Li, C.H.; Dixon, J.S.; Liu, W.K.
Arch. Biochem. Biophys. 133, 70-91, 1969
A: Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.
A: Reference number: A90048; MUID: 69289202
A: Contents: annotation
R: Li, C.H.; Dixon, J.S.
Arch. Biochem. Biophys. 146, 233-236, 1971
A: Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone:
A: Reference number: A90051; MUID: 72143935
A: Accession: A90051
A: Molecule type: protein
A: Residues: 27-94; 96-217 <LIC>
R: Niall, H.D.
Nature New Biol. 230, 90-91, 1971
A: Title: Revised primary structure for human growth hormone.
A: Reference number: A93397; MUID: 71139765
A: Accession: A93397
A: Molecule type: protein
A: Residues: 27-51 <NIA>
R: Niall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971
A: Title: Sequences of pituitary and placental lactogenic and growth hormones: evoluti
A: Reference number: A93778; MUID: 71153968
A: Accession: A93778
A: Molecule type: protein
A: Residues: 119-120; 157-159 <NI2>
R: Niall, H.D.
in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths,
A: Title: The chemistry of the human lactogenic hormones.
A: Reference number: A94427
A: Contents: annotation; somatotropin revision
R: Bewley, T.A.; Dixon, J.S.; Li, C.H.
Int. J. Pept. Protein Res. 4, 281-287, 1972
A: Title: Sequence comparison of human pituitary growth hormone, human chorionic somat
A: Reference number: A91764; MUID: 73092028
A: Accession: A91764
A: Molecule type: protein
A: Residues: 27-217 <BEW>
R: Lewis, U.J.; Bonewald, L.F.; Lewis, L.J.
Biochem. Biophys. Res. Commun. 92, 511-516, 1980
A: Title: The 20,000-dalton variant of human growth hormone: location of the amino aci
A: Reference number: A90217; MUID: 80130196
A: Contents: somatotropin, 20K short variant
A: Accession: A90217
A: Molecule type: protein
R: Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.; Turner, C.;
J. Biol. Chem. 256, 2395-2401, 1981
A: Title: The 20,000 molecular weight variant of human growth hormone. Preparation and
A: Reference number: A92311; MUID: 8117361
A: Contents: somatotropin, 20K short variant
A: Accession: A92311

A:Molecule type: protein
 A:Residues: 27-57/73-79 <CHA>
 R:Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
 J. Protein Chem. 2, 425-436, 1983
 A:Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
 A:Reference number: A61466
 A:Accession: A61466
 A:Molecule type: protein
 A:Residues: 27-69 <SIN>
 R:Robson, V.M.J.; Rae, I.D.; NG, F.
 Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
 A:Title: Identification of the aspartimide structure in a previously-reported peptide.
 A:Reference number: S09685; MUID:90334745
 A:Accession: S09685
 A:Molecule type: protein
 A:Residues: 27-34,'L',36-47 <ROB>
 R:de Vos, A.M.; Ultsch, M.; Kossiakoff, A.A.
 Science 255, 306-312, 1992
 A:Title: Human growth hormone and extracellular domain of its receptor: crystal structure
 A:Reference number: A41728; MUID:92196577
 A:Contents: annotation; X-ray crystallography, 2.8 angstroms
 A:Note: The structure of the complex with growth hormone receptor is described
 R:Gray, G.L.; Baldridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
 Gene 39, 247-254, 1985
 A:Title: Periplasmic production of correctly processed human growth hormone in Escherichia coli
 A:Reference number: I41126; MUID:86137393
 A:Accession: I84549
 A>Status: preliminary; translated from GB/EMBL/DBDJ
 A:Molecule type: mRNA
 A:Residues: 1-26 <RES>
 A:Cross-references: GB:M14398; NID:g183158; PIDN:AAA52554.1; PID:g183159
 C:Comment: The gene for this hormone is transcribed only in somatotrophic cells of the anterior pituitary gland.
 C:Genetics:
 A:Gene: GDB:GH1
 A:Cross-references: GDB:119982; OMIM:139250
 A:Map position: 17q23.1-17q23.3
 A:Introns: 4/1; 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; hormone; pituitary
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-217/Product: somatotropin 1, long form #status experimental <SOL>
 F:27-69/Product: growth hormone 5K peptide #status experimental <SKP>
 F:27-57,'L',208-215/Product: somatotropin 1, short form #status experimental <SOS>
 F:79-191,208-215/Disulfide bonds: #status experimental

Query Match 95.4%; Score 83; DB 1; Length 217;
 Best Local Similarity 93.8%; Pred. No. 9.3e-06;
 Matches 15; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 QY 1 YLRVOCRSVEGSCGF 16
 :|||||
 Db 202 FLRIVOCRSVEGSCGF 217

RESULT 2
 STHUV
 Somatotropin 2 precursor - human
 N:Alternate names: growth hormone 2; growth hormone variant; hGH-V; placental somatotropin
 N:Contains: somatotropin 2, long splice form; somatotropin 2, short splice form
 C:Species: Homo sapiens (man)
 C>Date: 17-Dec-1982 #sequence_revision 10-Feb-1995 #text_change 21-Jul-2000
 C:Accession: D32435; B28072; A01511; I52104; A60711
 R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.
 Genomics 4, 479-497, 1989
 A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
 A:Reference number: A32435; MUID:89307277
 A:Accession: D32435
 A:Molecule type: DNA
 A:Residues: 1-217 <CHE>
 A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52552.1; PID:g183152

R:Cooke, N.E.; Ray, J.; Emery, J.G.; Liehaber, S.A.
 J. Biol. Chem. 263, 9001-9006, 1988
 A:Title: Two distinct species of human growth hormone-variant mRNA in the human placenta
 A:Reference number: A92725; MUID:88243769
 A:Accession: B28072
 A:Molecule type: mRNA
 A:Residues: 1-217 <COO>
 R:Seeburg, P.H.
 DNA 1, 239-249, 1982
 A:Title: The human growth hormone gene family: nucleotide sequences show recent diver
 A:Reference number: A01511; MUID:83182010
 A:Accession: A01511
 A:Molecule type: DNA
 A:Residues: 1-34,'P',36-217 <SEE>
 R:Igout, A.; Scippo, M.L.; Frankenne, F.; Hennen, G.
 Arch. Int. Physiol. Biochim. 96, 63-67, 1988
 A:Title: Cloning and nucleotide sequence of placental hGH-V cDNA.
 A:Reference number: I52104; MUID:89024984
 A:Accession: I52104
 A>Status: preliminary; translated from GB/EMBL/DBDJ
 A:Molecule type: mRNA
 A:Residues: 1-217 <IGO>
 A:Cross-references: GB:M38451; NID:g183179; PIDN:AAA35891.1; PID:g183180
 R:Frankenne, F.; Scippo, M.L.; Van Beunnen, J.; Igout, A.; Hennen, G.
 J. Clin. Endocrinol. Metab. 71, 15-18, 1990
 A:Title: Identification of placental human growth hormone as the growth hormone-V gen
 A:Reference number: A60711; MUID:90317018
 A:Accession: A60711
 A:Molecule type: protein
 A:Residues: 27-44;46-57 <FRA>
 A:Experimental source: tissue placenta
 A:Note: partial glycosylation was demonstrated by lectin binding
 C:Comment: This gene is expressed by the placenta.
 C:Genetics:
 A:Gene: GDB:GH2
 A:Cross-references: GDB:119983; OMIM:139240
 A:Map position: 17q22-17q24
 A:Introns: 4/1; 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; glycoprotein; hormone; placenta
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-217/Product: somatotropin 2, long splice form #status predicted <SOL>
 F:27-57,'L',208-215/Product: somatotropin 2, short splice form #status predicted <SOS>
 F:79-191,208-215/Disulfide bonds: #status predicted
 F:166/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 95.4%; Score 83; DB 1; Length 217;
 Best Local Similarity 93.8%; Pred. No. 9.3e-06;
 Matches 15; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
 QY 1 YLRVOCRSVEGSCGF 16
 :|||||
 Db 202 FLRIVOCRSVEGSCGF 217

RESULT 3
 I67410
 Somatotropin - rhesus macaque
 N:Alternate names: growth hormone
 C:Species: Macaca mulatta (rhesus macaque)
 C>Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
 C:Accession: I67410; A05094
 R:Gollos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
 Endocrinology 133, 1744-1752, 1993
 A:Title: Cloning of four growth hormone/chorionic somatomotropin-related complemen
 A:Reference number: I53267; MUID:94008724
 A:Accession: I67410
 A>Status: translated from GB/EMBL/DBDJ
 A:Molecule type: mRNA
 A:Residues: 1-217 <RES>
 A:Cross-references: GB:L16556; NID:g293114; PIDN:AAA18842.1; PID:g293115
 R:Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.

Arch. Biochem. Biophys. 245, 287-291, 1986
 A:Title: The primary structure of monkey pituitary growth hormone.
 A:Reference number: A05094; MUID:86129460
 A:Accession: A05094

A:Molecule type: protein
 A:Residues: 27-99, 'Q', 101-178, 'D', 180-217 <LIC>
 A:Note: the monkey species is not identified in the reference
 R:Raben, M.S.

Science 125, 883-884, 1957
 A:Title: Preparation of growth hormone from pituitaries of man and monkey.
 A:Reference number: A4774
 A:Contents: annotation; Identification of source organism
 C:Superfamily: prolactin

Query Match 95.4%; Score 83; DB 2; Length 217;
 Best Local Similarity 93.8%; Pred. No. 9.3e-06;
 Matches 15; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 YLRVQCRSVEGSCGF 16
 :||:|||||||
 Db 202 FLRVQCRSVEGSCGF 217

RESULT 4

B32435
 chorionamotropin-like protein precursor - human

C:Species: Homo sapiens (man)
 C:Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 16-Jul-1999
 C:Accession: B32435

R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg, P.
 Genomics 4, 479-497, 1989
 A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A:Reference number: A32435; MUID:89307277

A:Accession: B32435

A>Status: preliminary

A:Molecule type: DNA

A:Residues: 1-199 <CHE>

A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52550.1; PID:g183150

C:Superfamily: prolactin

Query Match 92.0%; Score 80; DB 2; Length 199;
 Best Local Similarity 87.5%; Pred. No. 2.6e-05;
 Matches 14; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 YLRVQCRSVEGSCGF 16
 :||:|||||||
 Db 184 FLRVQCRSVEGSCGF 199

RESULT 5

A26449
 chorionamotropin precursor (allele hcs-3) - human

C:Species: Homo sapiens (man)

C:Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 28-Jul-1995
 C:Accession: A26449

R:Hirt, H.; Kimelman, J.; Birnbaum, M.J.; Chen, E.Y.; Seeburg, P.H.; Eberhardt, N.L.; Ba

DNA 6, 59-70, 1987

A:Title: The human growth hormone gene locus: structure, evolution, and allelic variation
 A:Reference number: A26449; MUID:87161235

A:Accession: A26449

A:Molecule type: DNA

A:Residues: 1-215 <HIR>

C:Superfamily: prolactin

F:1-26/Domain: signal sequence #status predicted <STG>

F:27-215/Product: chorionamotropin, hcs-3 allele #status predicted <MAT>

Query Match 92.0%; Score 80; DB 2; Length 215;
 Best Local Similarity 87.5%; Pred. No. 2.7e-05;
 Matches 14; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 YLRVQCRSVEGSCGF 16
 :||:|||||||
 Db 200 FLRVQCRSVEGSCGF 215

RESULT 6

LCHUC

chorionamotropin A precursor [validated] - human

N:Alternate names: chorionic somatomotropin 1; placental lactogen

C:Species: Homo sapiens (man)

C:Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 08-Dec-2000

C:Accession: C32435; A94422; I52342; A93833; A93192; A90054; A94427; A61283; I55229;

R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg,
 Genomics 4, 479-497, 1989

A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A:Reference number: A32435; MUID:89307277

A:Accession: C32435

A:Molecule type: DNA

A:Residues: 1-217 <CHE>

A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52551.1; PID:g183151

R:Goodman, H.M.; DeNoto, F.; Fiddes, J.C.; Hallelwell, R.A.; Page, G.S.; Smith, S.; T1

in Mobilization and Reassembly of Genetic Information, Scott, W.A.; Werner, R.; Joseph

A:Reference number: A94422

A:Accession: A94422

A:Molecule type: mRNA

A:Residues: 1-217 <GOO>

R:Tanaka, M.; Masuda, N.; Watahiki, M.; Yamakawa, M.; Shimizu, K.; Nagai, J.; Nakashi

Biochem. Int. 16, 287-292, 1988

A:Title: cDNA cloning of human chorionic somatomotropin-1 mRNA whose transcription

A:Reference number: I52342; MUID:88209096

A:Accession: I52342

A>Status: translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-3 <TAN>

A:Cross-references: GB:M35419; NID:g505822

R:Sherwood, L.M.; Burstein, Y.; Schechter, I.

Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979

A:Title: Primary structure of the NH-2-terminal extra piece of the precursor to human

A:Reference number: A93833; MUID:80034970

A:Accession: A93833

A:Molecule type: protein

A:Residues: 1,3-26 <SHE>

A:Experimental source: placenta

R:Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.

Nature 270, 494-499, 1977

A:Title: Construction and analysis of recombinant DNA for human chorionic somatomammo

A:Reference number: A93192; MUID:78071761

A:Accession: A93192

A:Molecule type: DNA

A:Residues: 50-217 <SHI>

A:Experimental source: placenta

R:Li, C.H.; Dixon, J.S.; Chung, D.

Arch. Biochem. Biophys. 155, 95-110, 1973

A:Title: Amino acid sequence of human chorionic somatomamotropin.

A:Reference number: A90054; MUID:73201971

A:Accession: A90054

A:Molecule type: protein

A:Residues: 27-217 <LIC>

A:Experimental source: placenta

R:Niall, H.D.

in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths,

A:Title: The chemistry of the human lactogenic hormones.

A:Reference number: A94427

A:Accession: A94427

A:Molecule type: protein

A:Residues: 27-217 <NIA>

A:Experimental source: placenta

R:Nic A Bhaird, N.; Tipton, K.F.

Biochem. Soc. Trans. 19, 20S, 1991

A:Title: Catechol-O-methyltransferase from human placenta: purification and some prop

A:Reference number: A61283; MUID:91244006

A:Accession: A61283

A:Molecule type: protein

A:Residues: 27-46 <NIC>
A:Note: chorionamototropin apparently copurified with placental catechol-O-methyltransferase
R:Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 233, 59-61, 1971
A:Title: Amino-acid sequence of human placental lactogen.
A:Reference number: A93401; MUID:72016313
A:Contents: annotation
R:Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 235, 64, 1972
A:Reference number: A93405
A:Contents: annotation
R:Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.
J. Biol. Chem. 254, 3782-3787, 1979
A:Title: Identification of the interchain disulfide bonds of dimeric human placental lactogen.
A:Reference number: A92251; MUID:79173081
A:Contents: annotation; dimeric disulfide bonds
R:Selby, M.J.; Barta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L.
J. Biol. Chem. 259, 13131-13138, 1984
A:Title: Analysis of a major human chorionic somatomamotropin gene. Evidence for two functional alleles.
A:Reference number: 155229; MUID:85030426
A:Accession: 155229
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:K02401; NID:g181120; PIDN:AAA52115.1; PID:g181121
R:Seeburg, P.H.; Shine, J.; Martial, J.A.; Ullrich, A.; Goodman, H.
Trans. Assoc. Am. Physicians 90, 109-116, 1977
A:Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.
A:Reference number: 159658; MUID:78160787
A:Accession: 159658
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 160-217 <RE2>
A:Cross-references: GB:M25118; NID:g181124; PIDN:AAA35721.1; PID:g181125
C:Genetics:
A:Gene: GDB:CSH1
A:Cross-references: GDB:119084; OMIM:150200
A:Map position: 17q22-17q24
A:Introns: 4/1; 57/3; 97/3; 152/3
C:Superfamily: prolactin
C:Keywords: hormone; placenta
F:1-26/domain: signal sequence #status experimental <SIG>
F:27-217/product: chorionamototropin A #status experimental <MAT>
F:79-191/disulfide bonds: #status experimental
F:208-215/disulfide bonds: (in monomeric form) #status experimental
F:208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental
F:215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental

Query Match 92.0%; Score 80; DB 1; Length 217;
Best Local Similarity 87.5%; Pred. No. 2.7e-05;
Matches 14; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 YLRVQCRSVEGSCGF 16
DB 202 FLRMVQCRSVEGSCGF 217
:|||||:|||||

RESULT 7
E32435
chorionamototropin B precursor - human
C:Alternate names: chorionic somatomamotropin 2
C:Species: Homo sapiens (man)
C:Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 16-Jul-1999
C:Accession: E32435
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.
Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277
A:Accession: E32435
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-217 <CHE>

A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52553.1; PID:g183153
C:Genetics:
A:Gene: GDB:CSH2
A:Cross-references: GDB:119813; OMIM:118820
A:Map position: 17q22-17q24
C:Superfamily: prolactin

Query Match 92.0%; Score 80; DB 2; Length 217;
Best Local Similarity 87.5%; Pred. No. 2.7e-05;
Matches 14; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

QY 1 YLRVQCRSVEGSCGF 16
DB 202 FLRMVQCRSVEGSCGF 217
:|||||:|||||

RESULT 8
I67408
chorionic somatomamotropin-2 - rhesus macaque (fragment)
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I67408
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomamotropin-related complementing genes.
A:Reference number: 153267; MUID:94008724
A:Accession: I67408
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-212 <RES>
A:Cross-references: GB:LI6553; NID:g293110; PIDN:AAA18840.1; PID:g293111
C:Superfamily: prolactin

Query Match 88.5%; Score 77; DB 2; Length 212;
Best Local Similarity 81.2%; Pred. No. 8e-05;
Matches 13; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 YLRVQCRSVEGSCGF 16
DB 197 FLRMVQCRSVEGSCGF 212
:|||||:|||||

RESULT 9
I67409
chorionic somatomamotropin-3 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I67409
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomamotropin-related complementing genes.
A:Reference number: 153267; MUID:94008724
A:Accession: I67409
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:LI6554; NID:g293112; PIDN:AAA18841.1; PID:g293113
C:Superfamily: prolactin

Query Match 88.5%; Score 77; DB 2; Length 217;
Best Local Similarity 81.2%; Pred. No. 8.1e-05;
Matches 13; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

QY 1 YLRVQCRSVEGSCGF 16
DB 202 FLRMVQCRSVEGSCGF 217
:|||||:|||||

RESULT 10
153267

chorionic somatomammotropin-1 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 16-Jul-1999
C:Accession: I53267
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementar
A:Reference number: I53267; MUID:94008724
A:Accession: I53267
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:L16552; NID:g293108; PIDN:AAA18839.1; PID:g2933109
C:Superfamily: prolactin

Query Match 88.5%; Score 77; DB 2; Length 217;
Best Local Similarity 81.2%; Pred. NO. 8.le-05;
Matches 13; Conservative 3; Mismatches 0; Indels 0; Gaps 0;

Qy 1 YLRVQCRSVEGSCGF 16
Db 202 FLRWQCRIVEGSCGF 217

RESULT 11
I67411
somatotropin - rhesus macaque
N:Alternate names: growth hormone
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I67411
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementar
A:Reference number: I53267; MUID:94008724
A:Accession: I67411
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:L16555; NID:g293116; PIDN:AAA20180.1; PID:g2933117
C:Superfamily: prolactin

Query Match 81.6%; Score 71; DB 2; Length 217;
Best Local Similarity 75.0%; Pred. NO. 0.00071;
Matches 12; Conservative 3; Mismatches 1; Indels 0; Gaps 0;

Qy 1 YLRVQCRSVEGSCGF 16
Db 202 FLRTVRCRAVEGSCGF 217

RESULT 12
JN0387
somatotropin - sei whale (tentative sequence) (fragments)
N:Alternate names: growth hormone
C:Species: Balaeoptera borealis (sei whale)
C:Date: 15-Jan-1993 #sequence_revision 15-Jan-1993 #text_change 31-Mar-2000
C:Accession: JN0387
R:Osipova, T.A.; Bulatov, A.A.; Pankov, Y.A.
Bioorg. Khim. 4, 1589-1599, 1978
A:Title: Structural studies of tryptic peptides from large cyanogen bromide fragments of
A:Reference number: JN0387
A:Accession: JN0387
A:Molecule type: protein
A:Residues: 1-163 <OSI>
C:Superfamily: prolactin
C:Keywords: growth factor; hormone

Query Match 59.2%; Score 51.5; DB 2; Length 163;
Best Local Similarity 58.8%; Pred. NO. 0.65;

Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;
Qy 1 YLRIVQCRS-VEGSCGF 16
Db 147 YLRVMKCRRFVESCASF 163

RESULT 13
STHO
somatotropin - horse
N:Alternate names: growth hormone
C:Species: Equus caballus (domestic horse)
C:Date: 13-Jul-1981 #sequence_revision 13-Jul-1981 #text_change 23-Aug-1996
C:Accession: A91772; A91395; A91383; A90240; A01514
R:Zakin, M.M.; Poskus, E.; Langton, A.A.; Ferrara, P.; Santome, J.A.; Dellacha, J.M.;
Int. J. Pept. Protein Res. 8, 435-444, 1976
A:Title: Primary structure of equine growth hormone.
A:Reference number: A91772; MUID:77005410
A:Accession: A91772
A:Molecule type: protein
A:Residues: 1-190 <ZAK>
R:Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.
FEBS Lett. 34, 353-355, 1973
A:Title: The amino acid sequence of equine growth hormone.
A:Reference number: A91395; MUID:74020362
A:Accession: A91395
A:Molecule type: protein
A:Residues: 1-190 <ZA2>
R:Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.
FEBS Lett. 25, 77-82, 1972
A:Title: Amino acid sequences around the cystine residues in equine growth hormone.
A:Reference number: A91383
A:Accession: A91383
A:Molecule type: protein
A:Residues: 42-69;157-190 <ZA3>
R:Oliver, J. 109, 19-24, 1968
Biochem. J. 109, 19-24, 1968
A:Title: Amino acid sequences around the cystine residues in horse growth hormone.
A:Reference number: A90240; MUID:68368390
A:Accession: A90240
A:Molecule type: protein
A:Residues: 176-190 <OLI>
C:Superfamily: prolactin
C:Keywords: hormone; pituitary
F:52-163,180-188/Disulfide bonds: #status experimental

Query Match 59.2%; Score 51.5; DB 1; Length 190;
Best Local Similarity 58.8%; Pred. NO. 0.74;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

Qy 1 YLRIVQCRS-VEGSCGF 16
Db 174 YLRVMKCRRFVESCASF 190

RESULT 14
A61584
somatotropin - alpaca
N:Alternate names: growth hormone
C:Species: Lama guanicoe pacos (alpaca)
C:Date: 28-Oct-1994 #sequence_revision 06-Jan-1995 #text_change 07-May-1999
C:Accession: A61584
R:Biscoglio de Jimenez Bonino, M.; Arnao de Nue, I.; Ore, R.; Sanchez, D.; Ferrara, P
Int. J. Pept. Protein Res. 38, 193-197, 1991
A:Title: Primary structure of alpaca growth hormone.
A:Reference number: A61584; MUID:92104767
A:Accession: A61584
A:Molecule type: protein
A:Residues: 1-190 <BIS>
C:Superfamily: prolactin
C:Keywords: anterior pituitary; growth factor; hormone
F:52-163,180-188/Disulfide bonds: #status predicted

Query Match 59.2%; Score 51.5; DB 1; Length 190;
Best Local Similarity 58.8%; Pred. No. 0.74;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:|||| || || |
Db 174 YLRVMKCRFEVSSCAF 190

RESULT 15
JK0219
somatotropin - African elephant
N:Alternate names: growth hormone
C:Species: Loxodonta africana (African elephant)
C:Date: 03-Aug-1992 #sequence_revision 03-Aug-1992 #text_change 15-Oct-1996
C:Accession: JK0219
R:Hulmes, J.D.; Miedel, M.C.; Li, C.H.; Pan, Y.C.E.
Int. J. Pept. Protein Res. 33, 368-372, 1989
A:Title: Primary structure of elephant growth hormone.
A:Reference number: JK0219
A:Accession: JK0219
A:Molecule type: protein
A:Residues: 1-190 <HUI>
A:Experimental source: pituitary gland
C:Superfamily: prolactin
F:1-190/Product: somatotropin #status experimental <MAT>

Query Match 59.2%; Score 51.5; DB 2; Length 190;
Best Local Similarity 58.8%; Pred. No. 0.74;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:|||| || || |
Db 174 YLRVMKCRFEVSSCAF 190

RESULT 16
JS0429
somatotropin - Arctic fox
N:Alternate names: growth hormone
C:Species: Alopec lagopus (Arctic fox)
C:Date: 07-Sep-1990 #sequence_revision 07-Sep-1990 #text_change 18-Jun-1993
C:Accession: JS0429
R:Li, C.H.; Izdebski, J.; Chung, D.
Int. J. Pept. Protein Res. 33, 70-72, 1989
A:Title: Primary structure of fox pituitary growth hormone.
A:Reference number: JS0429
A:Accession: JS0429
A:Molecule type: protein
A:Residues: 1-190 <LIC>
A:Note: residues 1-41 were sequenced; the sequence of residues 42-190 to is predicted fr
C:Superfamily: prolactin

Query Match 59.2%; Score 51.5; DB 2; Length 190;
Best Local Similarity 58.8%; Pred. No. 0.74;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:|||| || || |
Db 174 YLRVMKCRFEVSSCAF 190

RESULT 17
PN0140
somatotropin - sei whale
N:Alternate names: growth hormone
C:Species: Balenoptera borealis (sei whale)
C:Date: 07-May-1993 #sequence_revision 07-May-1993 #text_change 07-May-1999
C:Accession: PN0140

R:Yudaev, N.A.; Pankov, Y.A.; Bulatov, A.A.; Osipova, T.A.
Biokhimiia 47, 1059-1069, 1982
A:Title: Amino acid sequence of seiwhale somatotropin.
A:Reference number: PN0140; MUID:83000569
A:Accession: PN0140
A:Molecule type: protein
A:Residues: 1-190 <YUD>
A:Note: article in Russian with English abstract
C:Superfamily: prolactin
C:Keywords: growth factor; hormone
F:52-163,180-188/disulfide bonds: #status predicted

Query Match 59.2%; Score 51.5; DB 2; Length 190;
Best Local Similarity 58.8%; Pred. No. 0.74;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:|||| || || |
Db 174 YLRVMKCRFEVSSCAF 190

RESULT 18
STMS
somatotropin precursor - mouse
N:Alternate names: growth hormone
C:Species: Mus musculus (house mouse)
C:Date: 30-Sep-1987 #sequence_revision 30-Sep-1987 #text_change 28-May-1999
C:Accession: B23911
R:Linzer, D.I.H.; Talamantes, F.
J. Biol. Chem. 260, 9574-9579, 1985
A:Title: Nucleotide sequence of mouse prolactin and growth hormone mRNAs and expressi
A:Reference number: A92548; MUID:85261358
A:Accession: B23911
A:Molecule type: mRNA
A:Residues: 1-216 <LIN>
A:Cross-references: GB:X02891; GB:K03232; NID:g51067; PIDN:CAA26650.1; PID:g51068
C:Superfamily: prolactin
C:Keywords: anterior pituitary; growth factor; hormone
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-216/Product: somatotropin #status predicted <STN>
F:77-189,206-214/disulfide bonds: #status predicted

Query Match 59.2%; Score 51.5; DB 1; Length 216;
Best Local Similarity 58.8%; Pred. No. 0.82;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:|||| || || |
Db 200 YLRVMKCRFEVSSCAF 216

RESULT 19
STPG
somatotropin precursor - pig
N:Alternate names: growth hormone
C:Species: Sus scrofa domestica (domestic pig)
C:Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 18-Jun-1999
C:Accession: JW0015; S09015; I46584; I46585; PC1063; A01516; A94594
R:Vize, P.D.; Wells, J.R.E.
Gene 55, 339-344, 1987
A:Title: Isolation and characterization of the porcine growth hormone gene.
A:Reference number: JW0015; MUID:88030700
A:Accession: JW0015
A:Molecule type: DNA
A:Residues: 1-216 <VIZ>
A:Cross-references: GB:M17704; NID:g164475; PIDN:AAA31044.1; PID:g164476
R:Kato, Y.; Shimokawa, N.; Kato, T.; Hirai, T.; Yoshihama, K.; Kawai, H.; Hattori, M.
Biochim. Biophys. Acta 1048, 290-293, 1990
A:Title: Porcine growth hormone: molecular cloning of cDNA and expression in bacteria
A:Reference number: S09015; MUID:90212663
A:Accession: S09015

A:Molecule type: mRNA
A:Residues: 1-216 <AT>
A:Cross-references: GB:X53325; NID:g288361; PIDN:CAA37411.1; PID:g288362
R:Seeburg, P.H.; Sias, S.; Adelman, J.P.; de Boer, H.A.; Hayflick, J.; Jhurani, P.; Goed DNA 2, 37-45, 1983
A:Title: Efficient bacterial expression of bovine and porcine growth hormones.
A:Reference number: 145898; MUID:83209123
A:Accession: I46584
A>Status: preliminary; translated from GB/EMBL/DBDJ
A:Molecule type: mRNA
A:Residues: 7-8,'V',10-21,'Q',23-216 <SEE>
A:Cross-references: GB:M27326; NID:g164477; PIDN:AAA31045.1; PID:g164478
R:Su, T.
Gene 69, 81-89, 1988
A:Title: A multisite-directed mutagenesis using T7 DNA polymerase: application for recombinant protein expression.
A:Reference number: 146585; MUID:89137997
A:Accession: I46585
A>Status: preliminary; translated from GB/EMBL/DBDJ
A:Molecule type: mRNA
A:Residues: 1-8,'V',10-21,'Q',23-42 <SUX>
A:Cross-references: GB:M22761; NID:g164479; PIDN:AAA31046.1; PID:g164480
R:Yang, Q.; Zhu, B.L.; Zhou, S.W.; Qi, S.Z.
Chinese J. Biotechnol. 8, 318-323, 1992
A:Title: Cloning and partly sequencing of the porcine growth hormone (pGH) gene from pig.
A:Reference number: PC1063
A:Accession: PC1063
A:Molecule type: mRNA
A:Residues: 97-108,'E',110-158 <YAN>
A:Experimental source: pituitary
R:Wills, J.B.; Howard, S.C.; Scapa, S.; Wilhelm, A.E.
J. Biol. Chem. 245, 3407-3415, 1970
A:Title: Cyanogen bromide cleavage and partial amino acid sequence of porcine growth hormone.
A:Reference number: A01516; MUID:70293161
A:Accession: A01516
A:Molecule type: protein
A:Residues: 27-30;149-194,'N',196-216 <MIL>
R:Mills, J.B.
submitted to the Atlas, May 1971
A:Reference number: A94594
A:Accession: A94594
A:Molecule type: protein
A:Residues: 140-148 <MI2>
C:Genetics:
A:Gene: gh
A:Introns: 4/1; 57/3; 96/3; 150/3
C:Superfamily: prolactin
C:Keywords: anterior pituitary; growth factor; hormone
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-216/Product: somatotropin #status predicted <MAT>
F:78-189/Disulfide bonds: #status predicted
F:206-214/Disulfide bonds: #status experimental

Query Match 59.2%; Score 51.5; DB 1; Length 216;
Best Local Similarity 58.8%; Pred. No. 0.82;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRIVQCRS-VEGSCGF 16
||||:| | | | |
DB 200 YLRVMKRRFVESSCAF 216

RESULT 20
I46145
somatotropin precursor - dog
N:Alternate names: growth hormone
C:Species: Canis lupus familiaris (dog)
C>Date: 19-Dec-1997 #sequence_revision 19-Dec-1997 #text_change 16-Jul-1999
C:Accession: I46145; S35790
R:Ascacio-Martinez, J.A.; Barrera-Saldana, H.A.
Gene 143, 277-280, 1994
A:Title: A dog growth hormone cDNA codes for a mature protein identical to pig growth hormone.
A:Reference number: I46145; MUID:94266166

A:Accession: I46145
A>Status: preliminary; translated from GB/EMBL/DBDJ
A:Molecule type: mRNA
A:Residues: 1-216 <ASC>
A:Cross-references: EMBL:223067; NID:g312195; PIDN:CAA80601.1; PID:g312196
A>Note: submitted to the EMBL Data Library, June 1993
C:Superfamily: prolactin
C:Keywords: hormone; pituitary
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-216/Product: somatotropin #status predicted <MAT>
F:78-189,206-214/Disulfide bonds: #status predicted

Query Match 59.2%; Score 51.5; DB 2; Length 216;
Best Local Similarity 58.8%; Pred. No. 0.82;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRIVQCRS-VEGSCGF 16
||||:| | | | |
DB 200 YLRVMKRRFVESSCAF 216

RESULT 21
A37782
somatotropin precursor - American mink
N:Alternate names: growth hormone
C:Species: Mustela vison (American mink)
C>Date: 28-Jun-1991 #sequence_revision 26-Jul-1996 #text_change 16-Jul-1999
C:Accession: S12128; A37782
R:Shoji, K.; Ohara, E.; Watahiki, M.; Yoneda, Y.
Nucleic Acids Res. 18, 6424, 1990
A:Title: Cloning and nucleotide sequence of a cDNA encoding the mink growth hormone.
A:Reference number: S12128; MUID:91057130
A:Accession: S12128
A:Molecule type: mRNA
A:Residues: 1-216 <SHO>
A:Cross-references: EMBL:X56120; NID:g1177; PIDN:CAA35985.1; PID:g1177
R:Harada, Y.; Tatsumi, H.; Nakano, E.; Umez, M.
Biochem. Biophys. Res. Commun. 173, 1200-1204, 1990
A:Title: Cloning and sequence analysis of mink growth hormone cDNA.
A:Reference number: A37782; MUID:91097549
A:Accession: A37782
A:Molecule type: mRNA
A:Residues: 27-216 <HAR>
A:Cross-references: GB:M62901
C:Superfamily: prolactin

Query Match 59.2%; Score 51.5; DB 2; Length 216;
Best Local Similarity 58.8%; Pred. No. 0.82;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRIVQCRS-VEGSCGF 16
||||:| | | | |
DB 200 YLRVMKRRFVESSCAF 216

RESULT 22
B49159
somatotropin - golden hamster
N:Alternate names: growth hormone
C:Species: Mesocricetus auratus (golden hamster)
C>Date: 19-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000
C:Accession: B49159
R:Southard, J.N.; Sanchez-Jimenez, F.; Campbell, G.T.; Talamantes, F.
Endocrinology 129, 2965-2971, 1991
A:Title: Sequence and expression of hamster prolactin and growth hormone messenger RNA.
A:Reference number: A49159; MUID:92063850
A:Accession: B49159
A>Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-216 <SOU>
A:Cross-references: GB:S66299; NID:g239355; PIDN:AAB20368.1; PID:g239356

A:Note: sequence extracted from NCBI backbone (NCBIN:66299, NCBIP:66300)
C:Superfamily: prolactin

Query Match 59.2%; Score 51.5; DB 2; Length 216;
Best Local Similarity 58.8%; Pred. No. 0.82;
Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:| | | | |
Db 200 YLRVMKRRFEVSSCAF 216

RESULT 23

JC4632

somatotropin precursor - cat

N:Alternate names: growth hormone

C:Species: Felis silvestris catus (domestic cat)

C:Date: 10-Apr-1996 #sequence_revision 24-May-1996 #text_change 16-Jul-1999

C:Accession: JC4632

R:Warren, W.C.; Bentle, K.A.; Bogosian, G.

Gene 168, 247-249, 1996

A:Title: Cloning of the cDNAs coding for cat growth hormone and prolactin.

A:Reference number: JC4631; MUID:96194906

A:Accession: JC4632

A:Molecule type: mRNA

A:Residues: 1-216 <WAR>

A:Cross-references: GB:U25973; NID:g825768; PIDN:AAA67294.1; PID:g825769

A:Experimental source: pituitary

C:Genetics:

A:Gene: gh

C:Superfamily: prolactin

C:Keywords: pituitary

F:1-26/Domain: signal sequence #status predicted <SIG>

F:27-216/Product: somatotropin #status predicted <MAT>

Query Match

59.2%; Score 51.5; DB 2; Length 216;

Best Local Similarity 58.8%; Pred. No. 0.82;

Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:| | | | |
Db 200 YLRVMKRRFEVSSCAF 216

RESULT 24

S49483

somatotropin precursor - rabbit

N:Alternate names: growth hormone

C:Species: Oryctolagus cuniculus (domestic rabbit)

C:Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 16-Jul-1999

C:Accession: S49483

R:Wallis, O.C.; Wallis, M.

submitted to the EMBL Data Library, October 1994

A:Description: Cloning and sequencing of the gene for rabbit growth hormone.

A:Reference number: S49483

A:Accession: S49483

A>Status: preliminary

A:Molecule type: DNA

A:Residues: 1-216 <WAL>

A:Cross-references: EMBL:Z38127; NID:g558682; PIDN:CAA86287.1; PID:g558683

C:Genetics:

A:Introns: 4/1; 57/3; 96/3; 150/3

C:Superfamily: prolactin

Query Match

55.7%; Score 48.5; DB 2; Length 216;

Best Local Similarity 58.8%; Pred. No. 2.4;

Matches 10; Conservative 3; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:| | | | |

Db 200 YLRVMKRRFEVSSCVF 216

RESULT 25

S1RT

somatotropin precursor - rat

N:Alternate names: growth hormone

C:Species: Rattus norvegicus (Norway rat)

C:Date: 30-Jun-1979 #sequence_revision 23-Oct-1981 #text_change 18-Jun-1999

C:Accession: A93725; A93191; I58975; A01513

R:Page, G.S.; Smith, S.; Goodman, H.M.

Nucleic Acids Res. 9, 2087-2104, 1981

A:Title: DNA sequence of the rat growth hormone gene: location of the 5' terminus of

A:Reference number: A93725; MUID:82059526

A:Accession: A93725

A:Molecule type: DNA

A:Residues: 1-216 <PAG>

A:Cross-references: GB:V01238; GB:J00740; NID:g56320; PIDN:CAA24548.1; PID:g56321

R:Seeburg, P.H.; Shine, J.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.

Nature 270, 486-494, 1977

A:Title: Nucleotide sequence and amplification in bacteria of structural gene for rat

A:Reference number: A93191; MUID:78071760

A:Accession: A93191

A:Molecule type: mRNA

A:Residues: 1-26, 'L', 28-216 <SEE>

A:Cross-references: GB:V01237; GB:J00789; NID:g56317; PIDN:CAA24547.1; PID:g56318

R:Barta, A.; Richards, R.I.; Baxter, J.D.; Shine, J.

Proc. Natl. Acad. Sci. U.S.A. 78, 4867-4871, 1981

A:Title: Primary structure and evolution of rat growth hormone gene.

A:Reference number: I58975; MUID:82060155

A:Accession: I58975

A>Status: translated from GB/EMBL/DBDJ

A:Molecule type: DNA

A:Residues: 1-216 <RES>

A:Cross-references: EMBL:V01239; NID:g56322; PIDN:CAA24549.1; PID:g56323

C:Genetics:

A:Introns: 4/1; 57/3; 96/3; 150/3

C:Superfamily: prolactin

C:Keywords: hormone; pituitary

F:1-26/Domain: signal sequence #status predicted <SIG>

F:27-216/Product: somatotropin #status predicted <MAT>

F:78-189, 206-214/Disulfide bonds: #status experimental

Query Match 54.6%; Score 47.5; DB 1; Length 216;

Best Local Similarity 52.9%; Pred. No. 3.5;

Matches 9; Conservative 3; Mismatches 4; Indels 1; Gaps 1;

QY 1 YLRVQCRS-VEGSCGF 16
||||:| | | | |
Db 200 YLRVMKRRFEVSSCAF 216

RESULT 26

S1TBO

somatotropin precursor [validated] - bovine

N:Alternate names: growth hormone

C:Species: Bos primigenius taurus (cattle)

C:Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 15-Sep-2000

C:Accession: I45900; JC1316; A92283; I45898; I45901; A36506; A91396; A90187; A91208;

R:Gordon, D.F.; Quick, D.P.; Erwin, C.R.; Donelson, J.E.; Maurer, R.A.

Mol. Cell. Endocrinol. 33, 81-95, 1983

A:Title: Nucleotide sequence of the bovine growth hormone chromosomal gene.

A:Reference number: I45900; MUID:84058733

A:Accession: I45900

A>Status: translated from GB/EMBL/DBDJ

A:Molecule type: DNA

A:Residues: 1-217 <GOR>

A:Cross-references: GB:M57764; NID:g163091; PIDN:AAA30544.1; PID:g163092

R:Li, B.L.; Liang, Z.H.; Yang, X.Y.; Gan, K.D.; Zhou, B.; Li, Q.L.; Tang, J.Y.

Acta Biochim. Biophys. Sin. 26, 505-512, 1994

A:Title: Synthesis, cloning and high-level expression of the bovine growth hormone ge

A:Reference number: JC1316

A:Accession: JCI316
A:Molecule type: DNA
A:Residues: 'M',27-148,'C',150-193,'R',195-217 <LIB>
R:Miller, W.L.; Martial, J.A.; Baxter, J.D.
J. Biol. Chem. 255, 7521-7524, 1980
A:Title: Molecular cloning of DNA complementary to bovine growth hormone mRNA.
A:Reference number: A92283; MUID:80249494
A:Accession: A92283
A:Molecule type: mRNA
A:Residues: 1-217 <MIL>
A:Cross-references: GB:V00111; NID:9399; PIDN:CAA23445.1; PID:g400
R:Seeburg, P.H.; Stas, S.; Adelman, J.P.; de Boer, H.A.; Hayflick, J.; Jhurani, P.; Goed
DNA 2, 37-45, 1983
A:Title: Efficient bacterial expression of bovine and porcine growth hormones.
A:Reference number: I45898; MUID:83209123
A:Accession: I45898
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <SEE>
A:Cross-references: GB:M27325; NID:g163089; PIDN:AAA30543.1; PID:g163090
R:George, H.J.; L'Italiani, J.J.; Pilacinski, W.P.; Glassman, D.L.; Krzyzek, R.A.
DNA 4, 273-281, 1985
A:Title: High-level expression in Escherichia coli of biologically active bovine growth
A:Reference number: I45901; MUID:86004063
A:Accession: I45901
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 'M',27-49 <GEO>
A:Cross-references: GB:M11558; NID:g163093; PIDN:AAA30545.1; PID:g163094
R:Wood, D.C.; Salsgiver, W.J.; Kasser, T.R.; Lange, G.W.; Rowold, E.; Vieland, B.N.; Joh
rbow, J.R.; Bild, G.; Krivi, G.G.
J. Biol. Chem. 264, 14741-14747, 1989
A:Title: Purification and characterization of pituitary bovine somatotropin.
A:Reference number: A36506; MUID:89359269
A:Accession: A36506
A>Status: preliminary
A:Molecule type: protein
A:Residues: 27-34;152,'V',154-159 <WOO>
R:Wallis, M.
FEBS Lett. 35, 11-14, 1973
A:Title: The primary structure of bovine growth hormone.
A:Reference number: A91396; MUID:74028758
A:Accession: A91396
A:Molecule type: protein
A:Residues: 27-217 <WAL>
A:Note: 153-Val was found in one-third of the molecules
R:Graf, L.; Li, C.H.
Biochem. Biophys. Res. Commun. 56, 168-176, 1974
A:Title: On the primary structure of pituitary bovine growth hormone.
A:Reference number: A90187; MUID:74146429
A:Accession: A90187
A:Molecule type: protein
A:Residues: 91-96;104-121 <GRA>
R:Santomer, J.A.; Dellacha, J.M.; Paladini, A.C.; Pena, C.; Biscoglio, M.J.; Daurat, S.T.
Eur. J. Biochem. 37, 164-170, 1973
A:Title: Primary structure of bovine growth hormone.
A:Reference number: A91208; MUID:73249153
A:Accession: A91208
A:Molecule type: protein
A:Residues: 27-94,'E',96-109,'SQ',112-113,'Q',115,'G',118-119,121-193,'N',195-217 <SAN>
R:Seavey, B.N.; Singh, R.N.P.; Lewis, U.J.; Geschwind, I.I.
Biochem. Biophys. Res. Commun. 43, 189-195, 1971
A:Title: Bovine growth hormone: evidence for two allelic forms.
A:Reference number: A90171; MUID:71207803
A:Accession: A90171
A:Contents: annotation
A:Note: analysis of tryptic peptides from individual animals confirms the existence of a
R:Ramasaki, N.; Shimanaka, J.; Sonenbourg, M.
J. Biol. Chem. 250, 2510-2514, 1975
A:Title: Studies on the common active site of growth hormone. Revision of the amino acid
A:Reference number: A92175; MUID:75133461
A:Accession: A92175
A:Contents: annotation
A:Note: a fragment corresponding to residues 122-159 in the sequence shown had growth-pr
n erythrocyte membranes similar to that of human somatotropin

R:Carlacci, L.; Chou, K.C.; Maggiora, G.M.
submitted to the Brookhaven Protein Data Bank, February 1991
A:Reference number: A50827; PDB:1BS7
A:Contents: annotation; theoretical model, residues 27-217
R:Carlacci, L.; Chou, K.C.; Maggiora, G.M.
Biochemistry 30, 4389-4398, 1991
A:Title: A heuristic approach to predicting the tertiary structure of bovine somatotropin
A:Reference number: A30630; MUID:91214979
A:Contents: annotation; theoretical model
C:Genetics:
A:Gene: GHI
A:Introns: 5/1; 58/3; 97/3; 151/3
C:Superfamily: prolactin
C:Keywords: anterior pituitary; growth factor; hormone
F:1-26/Domain: signal sequence #status #status predicted <SIG>
F:27-217/Product: somatotropin #status experimental <MAT>
F:79-190,207-215/Disulfide bonds: #status experimental
Query Match 53.4%; Score 46.5; DB 1; Length 217;
Best Local Similarity 52.9%; Pred No. 5;
Matches 9; Conservative 3; Mismatches 4; Indels 1; Gaps 1;
QY 1 YLRIVQCRSV-EGSCGF 16
||||:| | | | |
Db 201 YLRVMKRRFGEASCAF 217
RESULT 27
STSH
somatotropin precursor - sheep
N:Alternate names: growth hormone
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C>Date: 30-Sep-1991 #sequence_revision 30-Sep-1991 #text_change 18-Jun-1999
C:Accession: S02225; S04969; A33228; A33229; I47081; A01515
R:Orlani, J.M.; O'Mahoney, J.V.; Brandon, M.R.
Nucleic Acids Res. 16, 9046, 1988
A:Title: Cloning and sequencing of the ovine growth hormone gene.
A:Reference number: S02225; MUID:89016583
A:Accession: S02225
A:Molecule type: DNA
A:Residues: 1-217 <ORI>
A:Cross-references: EMBL:X12546; NID:g1792; PIDN:CAA31063.1; PID:g1793
R:Warwick, J.M.; Wallis, O.C.; Wallis, M.
Biochim. Biophys. Acta 1008, 247-250, 1989
A:Title: Cloning, sequence and expression in Escherichia coli of cDNA for ovine pregr
A:Reference number: S04969; MUID:89287334
A:Accession: S04969
A:Molecule type: mRNA
A:Residues: 1-217 <WAR>
A:Cross-references: GB:X15976; NID:g609665; PIDN:CAA34098.1; PID:g609666
R:Li, C.H.; Gordon, D.; Knorr, J.
Arch. Biochem. Biophys. 156, 493-508, 1973
A:Title: The primary structure of sheep pituitary growth hormone.
A:Reference number: A90055; MUID:73220070
A:Accession: A33228
A:Molecule type: protein
A:Residues: 27-124,'D',126-217 <LIC>
R:Bellair, J.T.
Biochem. Biophys. Res. Commun. 46, 1128-1134, 1972
A:Title: Ovine growth hormone sequence of the C-terminal 68 amino acids.
A:Reference number: A90177; MUID:72134042
A:Accession: A33229
A:Molecule type: protein
A:Residues: 150-217 <BEL>
R:Byrne, C.R.; Wilson, B.W.; Ward, K.A.
Aust. J. Biol. Sci. 40, 459-468, 1987
A:Title: The isolation and characterisation of the ovine growth hormone gene.
A:Reference number: I47081; MUID:88268619
A:Accession: I47081
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-88,'S',90-133,'L',135-217 <BYR>

A:Cross-references: GB:M37310; NID:g165886; PIDN:AAA31527.1; PID:g165887
C:Genetics:
A:Introns: 5/1; 58/3; 97/3; 151/3
C:Superfamily: prolactin
C:Keywords: hormone; pituitary
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-217/Product: somatotropin #status experimental <MAT>
F:79-190,207-215/Disulfide bonds: #status experimental

Query Match 53.4%; Score 46.5; DB 1; Length 217;
Best Local Similarity 52.9%; Pred. No. 5;
Matches 9; Conservative 3; Mismatches 4; Indels 1; Gaps 1;

QY 1 YLRIVOCRSV-EGSCGF 16
|||::|| | | | |
Db 201 YLRVMKRRFGEASCAF 217

RESULT 28

STGT
somatotropin precursor - goat
N:Alternate names: growth hormone
C:Species: Capra aegagrus hircus (domestic goat)
C:Date: 30-Sep-1990 #sequence_revision 30-Sep-1990 #text_change 16-Jun-2000
C:Accession: S00321; J0031; S00681; J00480
R:Yamano, Y.; Oyabayashi, K.; Okuno, M.; Yato, M.; Kioka, N.; Manabe, E.; Hashi, H.; Sak
FBBS Lett. 228, 301-304, 1988
A:Title: Cloning and sequencing of cDNA that encodes goat growth hormone.
A:Reference number: S00321; MUID:88137627
A:Accession: S00321
A:Molecule type: mRNA
A:Residues: 1-217 <YAM>
A:Cross-references: EMBL:Y00767; NID:g975; PIDN:CAA68736.1; PID:g976
A:Experimental source: subspecies Saanen
R:Kioka, N.; Manabe, E.; Abe, M.; Hashi, H.; Yato, M.; Okuno, M.; Yamano, Y.; Sakai, H.;
Agric. Biol. Chem. 53, 1583-1587, 1989
A:Title: Cloning and sequencing of goat growth hormone gene.
A:Reference number: J00031
A:Accession: J00031
A:Molecule type: DNA
A:Residues: 1-217 <KIO>
A:Cross-references: GB:D00476; NID:g217664; PIDN:BAA00368.1; PID:g217665
R:Yato, M.; Yamano, Y.; Oyabayashi, K.; Okuno, M.; Kioka, N.; Manabe, E.; Sak
Nucleic Acids Res. 16, 3578, 1988
A:Title: Nucleotide sequence of the growth hormone gene cDNA from goat Capra hircus L.
A:Reference number: S00681; MUID:88233947
A:Accession: S00681
A:Molecule type: mRNA
A:Residues: 1-217 <YAT>
A:Cross-references: GB:X07035; NID:g973; PIDN:CAA30083.1; PID:g974
A:Experimental source: subspecies Tokara
C:Genetics:
A:Introns: 5/1; 58/3; 97/3; 151/3
C:Superfamily: prolactin
C:Keywords: anterior pituitary; growth factor; hormone
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-217/Product: somatotropin #status predicted <MAT>
F:79-190,207-215/Disulfide bonds: #status predicted

Query Match 53.4%; Score 46.5; DB 1; Length 217;
Best Local Similarity 52.9%; Pred. No. 5;
Matches 9; Conservative 3; Mismatches 4; Indels 1; Gaps 1;

QY 1 YLRIVOCRSV-EGSCGF 16
|||::|| | | | |
Db 201 YLRVMKRRFGEASCAF 217

RESULT 29

S32682
somatotropin - domestic water buffalo

N:Alternate names: growth hormone
C:Species: Bubalus arnee bubalis (domestic water buffalo)
C:Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 16-Jul-1999
C:Accession: S32682
R:Verma, S.; Garg, L.C.
submitted to the EMBL Data Library, March 1993
A:Reference number: S32682
A:Accession: S32682
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-217 <VER>
A:Cross-references: EMBL:X72947; NID:g296142; PIDN:CAA51450.1; PID:g296143
C:Superfamily: prolactin

Query Match 53.4%; Score 46.5; DB 2; Length 217;
Best Local Similarity 52.9%; Pred. No. 5;
Matches 9; Conservative 3; Mismatches 4; Indels 1; Gaps 1;

QY 1 YLRIVOCRSV-EGSCGF 16
|||::|| | | | |
Db 201 YLRVMKRRFGEASCAF 217

RESULT 30

A60617
somatotropin - bullfrog (fragments)
N:Alternate names: growth hormone
C:Species: Rana catesbeiana (bullfrog)
C:Date: 28-Apr-1993 #sequence_revision 28-Apr-1993 #text_change 30-Sep-1993
C:Accession: A60617
R:Kobayashi, T.; Kikuyama, S.; Yasuda, A.; Kawauchi, H.; Yamaguchi, K.; Yokoo, Y.
Gen. Comp. Endocrinol. 73, 417-424, 1989
A:Title: Purification and characterization of bullfrog growth hormone.
A:Reference number: A60617; MUID:89171981
A:Accession: A60617
A:Molecule type: protein
A:Residues: 1-45 <KOB>
C:Superfamily: prolactin
C:Keywords: disulfide bond; hormone; pituitary

Query Match 50.0%; Score 43.5; DB 2; Length 45;
Best Local Similarity 47.1%; Pred. No. 4.1;
Matches 8; Conservative 5; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRIVOCRS-VEGSCGF 16
|||::|| | | | |
Db 29 YLRVMKRRFVESNCTF 45

RESULT 31

A56816
somatotropin - bullfrog
N:Alternate names: growth hormone
C:Species: Rana catesbeiana (bullfrog)
C:Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 01-Aug-1997
C:Accession: A56816
R:Kobayashi, T.; Yasuda, A.; Yamaguchi, K.; Kawauchi, H.; Kikuyama, S.
Biochim. Biophys. Acta 1078, 383-387, 1991
A:Title: The complete amino acid sequence of growth hormone of the bullfrog (Rana cat
A:Reference number: A56816; MUID:91316122
A:Accession: A56816
A:Status: preliminary
A:Molecule type: protein
A:Residues: 1-190 <KOB>
A:Note: sequence extracted from NCBI backbone (NCBIP:45905)
C:Superfamily: prolactin

Query Match 50.0%; Score 43.5; DB 2; Length 190;
Best Local Similarity 47.1%; Pred. No. 13;
Matches 8; Conservative 5; Mismatches 3; Indels 1; Gaps 1;

```
QY 1 YLRIVQCRS-VEGSCGF 16
|:::| | |
Db 174 YLKVMKRRFVESNCTF 190

RESULT 32
JS0037
somatotropin precursor - bullfrog
N:Alternate names: growth hormone
C:Species: Rana catesbeiana (bullfrog)
C:Date: 31-Mar-1992 #sequence_revision 31-Mar-1992 #text_change 16-Jul-1999
C:Accession: JS0037; PS0310
R:Pan, F.M.; Chang, W.C.
Biochim. Biophys. Acta 950, 238-242, 1988
A:Title: Cloning and sequencing of bullfrog growth hormone complementary DNA.
A:Reference number: JS0037; MUID:88252154
A:Accession: JS0037
A:Molecule type: mRNA
A:Residues: 1-215 <PAN>
A:Cross-references: GB:X12520; NID:g64259; PIDN:CAA31038.1; PID:g64260
A:Accession: PS0310
A:Molecule type: protein
A:Residues: 26-55 <PA2>
C:Comment: This protein is synthesized and secreted by the anterior pituitary gland and
C:Superfamily: prolactin
C:Keywords: growth factor; hormone
F:1-25/Domain: signal sequence #status predicted <SIG>
F:26-215/Product: somatotropin #status experimental <MAT>

Query Match 50.0%; Score 43.5; DB 2; Length 215;
Best Local Similarity 47.1%; Pred. No. 15;
Matches 8; Conservative 5; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRIVQCRS-VEGSCGF 16
|:::| | |
Db 199 YLKVMKRRFVESNCTF 215

RESULT 33
I51188
somatotropin - bullfrog
N:Alternate names: growth hormone
C:Species: Rana catesbeiana (bullfrog)
C:Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 16-Jul-1999
A:Accession: I51188
R:Takahashi, N.; Kikuyama, S.; Gen, K.; Maruyama, O.; Kato, Y.
J. Mol. Endocrinol. 9, 283-289, 1992
A:Title: Cloning of a bullfrog growth hormone cDNA: expression of growth hormone mRNA in
A:Reference number: I51188; MUID:93119453
A:Accession: I51188
A>Status: preliminary; translated from GB/EMBL/DDBJ
A:Molecule type: mRNA
A:Residues: 1-215 <TAK>
A:Cross-references: GB:IS52027; NID:g262921; PIDN:AAB2492.1; PID:g262922
C:Superfamily: prolactin

Query Match 50.0%; Score 43.5; DB 2; Length 215;
Best Local Similarity 47.1%; Pred. No. 15;
Matches 8; Conservative 5; Mismatches 3; Indels 1; Gaps 1;

QY 1 YLRIVQCRS-VEGSCGF 16
|:::| | |
Db 199 YLKVMKRRFVESNCTF 215

RESULT 34
A69369
glutamate synthase (gltB) homolog - Archaeoglobus fulgidus
C:Species: Archaeoglobus fulgidus
C:Date: 05-Dec-1997 #sequence_revision 05-Dec-1997 #text_change 29-Sep-1999

C:Accession: A69369
R:Klenk, H.P.; Clayton, R.A.; Tomb, J.F.; White, O.; Nelson, K.E.; Ketchum, K.A.; Dod
.: Fleischmann, R.D.; Quackenbush, J.; Lee, N.H.; Sutton, G.G.; Gill, S.; Kirkness, E
Glodek, A.; Zhou, L.; Overbeek, R.; Gocayne, J.D.; Weidman, J.F.; McDonald, L.
Nature 390, 364-370, 1997
A:Authors: Utterback, T.; Cotton, M.D.; Spriggs, T.; Artlach, P.; Kaine, B.P.; Sykes,
Smith, H.O.; Woese, C.R.; Venter, J.C.
A:Title: The complete genome sequence of the hyperthermophilic, sulfate-reducing arch
A:Reference number: A69250; MUID:98049343
A:Accession: A69369
A>Status: preliminary; nucleic acid sequence not shown; translation not shown
A:Molecule type: DNA
A:Residues: 1-511 <KLE>
A:Cross-references: GB:AE001038; GB:AE000782; NID:g2689361; PIDN:AAB90287.1; PID:g264
C:Superfamily: glutamate synthase (NADPH) alpha chain; ferredoxin 2[4Fe-4S] homology
F:17-73/Domain: ferredoxin 2[4Fe-4S] homology <FER>

Query Match 49.4%; Score 43; DB 2; Length 511;
Best Local Similarity 50.0%; Pred. No. 36;
Matches 7; Conservative 2; Mismatches 5; Indels 0; Gaps 0;

QY 3 RIVQCRSVEGSCGF 16
|:::| | |
Db 23 RCICRCVRCQCGF 36

RESULT 35
A60969
prolactin precursor - bullfrog (fragment)
C:Species: Rana catesbeiana (bullfrog)
C:Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 07-Apr-1994
A:Accession: A60969; A61134
R:Takahashi, N.; Yoshihama, K.; Kikuyama, S.; Yamamoto, K.; Wakabayashi, K.; Kato, Y.
J. Mol. Endocrinol. 5, 281-287, 1990
A:Title: Molecular cloning and nucleotide sequence analysis of complementary DNA for
A:Reference number: A60969; MUID:91144703
A:Accession: A60969
A>Status: not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 1-207 <TAK>
R:Yasuda, A.; Yamaguchi, K.; Kobayashi, T.; Yamamoto, K.; Kikuyama, S.; Kawauchi, H.
Gen. Comp. Endocrinol. 83, 218-226, 1991
A:Title: The complete amino acid sequence of prolactin from the bullfrog, Rana catesb
A:Reference number: A61134; MUID:92009093
A:Accession: A61134
A:Molecule type: protein
A:Residues: 10-122;124-207 <YAS>
C:Superfamily: prolactin
C:Keywords: anterior pituitary; hormone
F:1-9/Domain: signal sequence (fragment) #status predicted <SIG>
F:10-207/Product: prolactin #status predicted <MAT>
F:13-20,67-182,199-207/Disulfide bonds: #status predicted

Query Match 48.9%; Score 42.5; DB 2; Length 207;
Best Local Similarity 46.7%; Pred. No. 21;
Matches 7; Conservative 6; Mismatches 1; Indels 1; Gaps 1;

QY 1 YLRIVQCRSV-EGSC 14
|:::| | |
Db 193 YLKLLKCLRLIHGNC 207

RESULT 36
T30885
complement component C3 homolog - African clawed frog
C:Species: Xenopus laevis (African clawed frog)
C:Date: 22-Oct-1999 #sequence_revision 22-Oct-1999 #text_change 21-Jul-2000
C:Accession: T30885
R:Mo, R.; Kato, Y.; Nonaka, M.; Nakayama, K.; Takahashi, M.
Immunogenetics 43, 360-369, 1996
A:Title: Fourth component of Xenopus laevis complement: cDNA cloning and linkage anal
```

A:Reference number: Z20919; MUID:96186527
A:Accession: T30885
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-1683 <MOR>
A:Cross-references: EMBL:D78003; NID:gl183856; PIDN:BAAL1188.1; PID:gl183857
C:Superfamily: alpha-2-macroglobulin

Query Match 48.3%; Score 42; DB 2; Length 1683;
Best Local Similarity 53.3%; Pred. No. 1.4e+02;
Matches 8; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 1 YLRVQCRSVGSG 15
DB 1039 YLRILQFKKADSG 1053
||||| : |||
| | | | | : | | |

RESULT 37
E96682
hypothetical protein Fl2P19.1 [imported] - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C:Accession: E96682
R:Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso,
Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.;
ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A:Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.
C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Lueros, J.S.; Maiti, R.; Marziani,
Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A:Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon,
ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A:Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A:Reference number: A96141; MUID:21016719
A:Accession: E96682
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-1036 <STO>
A:Cross-references: GB:AE005173; NID:96227009; PIDN:AAF06045.1; GSPDB:GN00141
C:Genetics:
A:Gene: Fl2P19.1
A:Map position: 1

Query Match 47.7%; Score 41.5; DB 2; Length 1036;
Best Local Similarity 47.1%; Pred. No. 1.1e+02;
Matches 8; Conservative 3; Mismatches 5; Indels 1; Gaps 1;

QY 1 YLRVQCRSVG-SCGF 16
DB 863 YLKVVNCESLERLDCSF 879
||||| : |||
| | | | | : | | |

RESULT 38
S37763
hypothetical protein - fruit fly (Drosophila miranda) transposon TRIM
C:Species: Drosophila miranda
C:Date: 19-May-1994 #sequence_revision 01-Dec-1995 #text_change 07-May-1999
C:Accession: S37763
R:Steinemann, M.; Steinemann, S.
Chromosoma 101, 169-179, 1991
A:Title: Preferential Y chromosomal location of TRIM, a novel transposable element of Dr
A:Reference number: S37763; MUID:92164374
A:Accession: S37763
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-128 <STE>
A:Cross-references: EMBL:X59239
A:Note: the authors translated the codon CTG for residue 3 as Arg, GGC for residue 61 as
C:Genetics:
A:Gene: FlyBase:Dmir/TRIM
A:Cross-references: FlyBase:FBgn0004642

A:Mobile element: transposon TRIM

Query Match 47.1%; Score 41; DB 2; Length 128;
Best Local Similarity 53.8%; Pred. No. 24;
Matches 7; Conservative 4; Mismatches 2; Indels 0; Gaps 0;

QY 3 RIVQCRSVGSG 15
DB 90 QMLQRTVEASLG 102
||||| : |||
| | | | | : | | |

RESULT 39
A24911
prolactin-like protein precursor - rat
C:Species: Rattus norvegicus (Norway rat)
C:Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 05-Nov-1999
C:Accession: A24911
R:Duckworth, M.L.; Peden, L.M.; Friesen, H.G.
J. Biol. Chem. 261, 10879-10884, 1986
A:Title: Isolation of a novel prolactin-like cDNA clone from developing rat placenta.
A:Reference number: A24911; MUID:86278172
A:Accession: A24911
A:Molecule type: mRNA
A:Residues: 1-227 <DUC>
A:Cross-references: GB:M13750; NID:g206232; PIDN:AAA41890.1; PID:g206233
C:Superfamily: prolactin
F:1-31/Domain: signal sequence #status predicted <SIG>
F:32-227/Product: prolactin-like protein #status predicted <MAT>

Query Match 47.1%; Score 41; DB 2; Length 227;
Best Local Similarity 35.7%; Pred. No. 38;
Matches 5; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

QY 1 YLRVQCRSVGSG 14
DB 214 YLKLLKCLIRSKC 227
||||| : |
| | | | | : |

RESULT 40
T47344
hypothetical protein Fl8P9.20 - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 20-Apr-2000
C:Accession: T47344
R:Nyakatura, G.; Fartmann, B.; Dauner, D.; Sterr, W.; Holland, R.; Weichselgartner, M.
Mayer, K.F.X.
submitted to the Protein Sequence Database, April 2000
A:Reference number: Z24458
A:Accession: T47344
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-372 <NYA>
A:Cross-references: EMBL:AL138654
A:Experimental source: cultivar Columbia; BAC clone Fl8P9
C:Genetics:
A:Map position: 3
A:Introns: 125/3; 194/3
A:Note: Fl8P9.20

Query Match 47.1%; Score 41; DB 2; Length 372;
Best Local Similarity 63.6%; Pred. No. 57;
Matches 7; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 6 QCRSVGSGGF 16
DB 189 RCPVFGSGGF 199
| : |||||
| | | | | : | | | |

RESULT 41
T09059


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Db 179 VVQPGAVLGSQGF 191
::: :||| :||| :||| :||| :|||
::: :||| :||| :||| :||| :|||

RESULT 46
F72094
UDP-3-O-(R-3-hydroxymyristoyl)-glucosamine N-acyltransferase CP0456 [imported] - Chlamydia
C:Species: Chlamydia pneumoniae, Chlamydia pneumoniae
C:Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 11-May-2000
C:Accession: F72094; C81574
R:Kalan, S.; Mitchell, W.; Marathe, R.; Lammel, C.; Fan, J.; Olinger, L.; Grimwood, J.;
Nature Genet. 21, 385-389, 1999
A:Title: Comparative genomes of Chlamydia pneumoniae and C. trachomatis.
A:Reference number: A72000; MUID:99206606
A:Accession: F72094
A:Status: preliminary
A:Gene: lpxD
A:Molecule type: DNA
A:Residues: 1-360 <ARN>
A:CROSS-references: GB:AE001615; GB:AE001363; NID:94376574; PIDN:AAD18451.1; PID:9437657
A:Experimental source: strain CWL029
R:Read, T.D.; Brunham, R.C.; Shen, C.; Gill, S.R.; Heidelberg, J.F.; White, O.; Hickey,
C.; Dodson, R.; Gwinn, M.; Nelson, W.; DeBoy, R.; Kolonay, J.; McClarty, G.; Salzberg,
Nucleic Acids Res. 28, 1397-1406, 2000
A:Title: Genome sequences of Chlamydia trachomatis MoPn and Chlamydia pneumoniae AR39.
A:Reference number: A81500; MUID:20150255
A:Accession: C81574
A:Status: preliminary
A:Gene: lpxD; CP0456
A:Molecule type: DNA
A:Residues: 1-360 <REA>
A:CROSS-references: GB:AE002207; GB:AE002161; NID:97189377; PIDN:AAF38294.1; PID:9718937
A:Experimental source: strain AR39, HL cells
C:Genetics:
C:Superfamily: UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase

Query Match 46.0%; Score 40; DB 2; Length 360;
Best Local Similarity 61.5%; Pred. No. 80;
Matches 8; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 4 IVQCRSVESGCGF 16
::: :||| :||| :||| :||| :|||
::: :||| :||| :||| :||| :|||

Db 179 VVQPGAVLGSQGF 191

RESULT 47
DB4509
hypothetical protein At2g13640 [imported] - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Mar-2001
C:Accession: DB4509
R:Liu, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.;
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, L.;
euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, J.
Nature 402, 761-768, 1999
A:Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A:Reference number: A84420; MUID:20083487
A:Accession: DB4509
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-384 <STO>
A:CROSS-references: GB:AE002093; NID:94558668; PIDN:AAD22686.1; GSPDB:GN00139
C:Genetics:
A:Map position: 2
C:Superfamily: Arabidopsis thaliana hypothetical protein At2g32820

Query Match 46.0%; Score 40; DB 2; Length 384;
Best Local Similarity 37.5%; Pred. No. 84;
Matches 6; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

Qy 1 YLRIVQCRSVESGCGF 16
::: :||| :||| :||| :||| :|||
::: :||| :||| :||| :||| :|||
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Db 366 YVKIWLQIKVSCGF 381
::: :||| :||| :||| :||| :|||
::: :||| :||| :||| :||| :|||

RESULT 48
AH0042
formate dehydrogenase (EC 1.2.1.2) [imported] - Yersinia pestis (strain CO92)
C:Species: Yersinia pestis
C:Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 27-Nov-2001
C:Accession: AH0042
R:Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.;
deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.;
il, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, S.; Barrel
Nature 413, 523-527, 2001
A:Title: Genome sequence of Yersinia pestis, the causative agent of plague.
A:Reference number: AB0001; MUID:21470413; PMID:11586360
A:Accession: AH0042
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-715 <KUR>
A:CROSS-references: GB:AL590842; PIDN:CAC89203.1; PID:g15978442; GSPDB:GN00175
C:Genetics:
A:Gene: fdhF
C:Superfamily: formate dehydrogenase
C:Keywords: oxidoreductase

Query Match 46.0%; Score 40; DB 2; Length 715;
Best Local Similarity 66.7%; Pred. No. 1.4e+02;
Matches 6; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

Qy 7 CRSVEGSCG 15
::: :||| :||| :||| :||| :|||
::: :||| :||| :||| :||| :|||

Db 587 CRSMTGNCG 595

RESULT 49
T00017
gene ADAMTS-1 protein - mouse
C:Species: Mus musculus (house mouse)
C:Date: 22-Jan-1999 #sequence_revision 22-Jan-1999 #text_change 21-Jul-2000
C:Accession: T00017
R:Kuno, K.; Lizasa, H.; Ohno, S.; Matsushima, K.
Genomics 46, 466-471, 1997
A:Title: The exon/intron organization and chromosomal mapping of the mouse ADAMTS-1 g
A:Reference number: 214055; MUID:98110583
A:Accession: T00017
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-951 <KUN>
A:CROSS-references: EMBL:AB001735; NID:g2809056; PIDN:BAA24501.1; PID:g2809057
A:Experimental source: strain 129SVJ
C:Genetics:
A:Gene: ADAMTS-1
A:Introns: 228/1; 343/3; 388/1; 444/1; 539/3; 602/1; 660/3; 719/2
C:Superfamily: thrombospondin type 1 repeat homology
F:542-598/Domain: thrombospondin type 1 repeat homology <THR>

Query Match 46.0%; Score 40; DB 2; Length 951;
Best Local Similarity 60.0%; Pred. No. 1.8e+02;
Matches 6; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 3 RIVQCRSVESG 12
::: :||| :||| :||| :||| :|||
::: :||| :||| :||| :||| :|||

Db 861 RVVQCRDING 870

RESULT 50
WMAD12
DNA-directed DNA polymerase (EC 2.7.7.7) - human adenovirus 2
C:Species: Mastadenovirus h2 (human adenovirus 2)
A:Note: host Homo sapiens (man)
```

C>Date: 05-Apr-1983 #sequence_revision 05-Apr-1983 #text_change 16-Feb-1997
C:Accession: A92351; A92352; A00711
R:Gingeras, T.R.; Sciaky, D.; Gelinias, R.E.; Bing-Dong, J.; Yen, C.E.; Kelly, M.M.; Bull
J. Biol. Chem. 257, 13475-13491, 1982
A:Title: Nucleotide sequences from the adenovirus-2 genome.
A:Reference number: A92351; MUID:83056843
A:Accession: A92351
A:Molecule type: DNA
A:Residues: 1-1056 <GIN>
R:Alestrom, P.; Akusjarvi, G.; Pettersson, M.; Pettersson, U.
J. Biol. Chem. 257, 13492-13498, 1982
A:Title: DNA sequence analysis of the region encoding the terminal protein and the hypot
A:Reference number: A92352; MUID:83056844
A:Accession: A92352
A:Molecule type: DNA
A:Residues: 1-1056 <ALE>
C:Superfamily: adenovirus DNA-directed DNA polymerase
C:Keywords: DNA binding; DNA replication; nucleotidyltransferase

Query Match 46.0%; Score 40; DB 1; Length 1056;
Best Local Similarity 50.0%; Fred. No. 1.9e+02;
Matches 6; Conservative 4; Mismatches 2; Indels 0; Gaps 0;

QY 4 IVQCRSVEGSCG 15
:|:|:|:|:|
Db 911 LVECEIVCGACG 922

Search completed: July 10, 2002, 08:26:01
Job time: 138 sec